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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/632,586	07/31/2003	Yong Ki Cho	51876P382	5008

8791 7590 11/04/2004

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EXAMINER

MILLER, PATRICK L

ART UNIT PAPER NUMBER

2837

DATE MAILED: 11/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/632,586	Applicant(s) CHO, YONG KI	
	Examiner Patrick Miller	Art Unit 2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5,6,9-12,14-18 and 20 is/are rejected.
- 7) ☒ Claim(s) 4,7,8,13 and 19 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>04052004</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Drawings

1. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The abstract of the disclosure is objected to because the abstract uses the word "means."

Correction is required. See MPEP § 608.01(b).

- Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Objections

3. Claims 5-8, 14, 15, and 20 are objected to because of the following informalities: See bullets below. Appropriate correction is required.

- Claims 5, 14, and 20 recite, “a plurality of modes” (lines 7 of each claim). Change “a” to “the” or “said.”
- Claim 15 recites, “wherein a plurality of modes includes...” The way the claim is worded, the Examiner is unsure if this claim is meant to depend from claim 9 or from claim 14, respectively. Please clarify.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Fukuhara (5,061,885).

- Fukuhara discloses a screw driver system comprising: a driver having a first signal generating means for generating a rotation start signal to start a fastening operation, and second signal generating means for generating a rotational stop signal to stop a fastening operation (Fig. 1, #9 open is stop signal; closed is start signal; col. 3, lines 33-39); a power controller that supplies electric power to the driver in response to the start signal and stops electric power to the driver in response to the stop signal (Figs. 1 and 5, #4 supplies power to the motor based on the start/stop signal from #9); a driver monitoring

means for monitoring the fastening operation of the driver based on predetermined fastening information, the start signal, and the stop signal, in order to determine whether fastening operation is correctly completed (Fig. 5, #4 monitors fastening operation based on #'s 1, 5, 2, and 6, which affect driver, #9, and these systems have predetermined information, such as time requirements for the counter, #21; Fig. 6, also determines when fastening operation is correctly completed, from time e to f.); generating an information signal based on a result of the monitoring (Fig. 1, NG generated and sent to #4), and a display unit that receives the information signal from the monitoring means and displays the information signal (col. 5, lines 33-37).

- With respect to claims 2 and 3, Fukuhara discloses the driver monitoring means includes a determining means for determining one complete cycle of fastening operation based on a time interval between the rotation start signal and the rotation stop signal (Fig. 6); and the predetermined target time range and the determination means generates a completion signal representing the one complete cycle when the time interval is in the predetermined target time range (Fig. 6, time intervals a-f are set based on the value in the counter, #21 of Fig. 1, and after .2 seconds, the cycle is complete; col. 4, lines 7-43).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuhara (5,061,885) as applied to claim 1 above, and further in view of Gass et al (6,526,536).

- Fukuhara does not disclose the limitations of claim 5.
- Gass et al disclose an electric screwdriver system that has a storage means for storing information relating to a plurality of modes and fastening information (col. 15, lines 23-35); a user control panel for generating a selection signal to select one of the modes (col. 14, lines 13-21; col. 15, lines 10-22); and a computation means that uses the operation information for the selected mode (cols. 9/10, lines 46-67/1-24; Fig. 7, #26 operates in the input mode and computes values based on the selected mode and the feedback from the sensors, #42 and #125, and user input, #36). The motivation to use a computation means that operates by a selected mode of operation stored in a storage means, and selected from a user control panel, is to provide the advantage of adding new functions or modes without replacement of the entire device (col. 10, lines 16-18).
- Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the screwdriver system of Fukuhara with a computation means that operates based on a selected mode of operation stored in a storage means, and selected from a user interface, thereby providing the advantage of allowing the user to

Art Unit: 2837

add new functions or modes without having to replace the entire device, as taught by Gass et al.

6. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuhara and Gass et al as applied to claims 1 and 5 above, and further in view of Thompson et al (6,479,958).

- Fukuhara and Gass et al do not disclose the limitations of claim 6.
- Thompson et al disclose an electric screwdriver system (col. 1, lines 20-22) that has normal and pulsed modes (col. 3, lines 46-50). In this case, the Examiner has equated the pulsed mode to “an operation mode.” Thompson et al also disclose monitoring the fastening means by comparing a time interval between the rotation start signal and stop signal to generate a completion signal representing a completion of fastening operation (col. 5, lines 45-53; col. 6, lines 14-19; Fig. 6, comparing time interval from ‘C’ to ‘F’ is between the start signal, ‘A,’ and the stop signal (counter time-out), and the completion of fastening is shutting the motor off). The motivation to provide a plurality of modes (specifically the pulsed mode) and generating a completion signal is to increase the rotational torque (col. 1, lines 22-24) and prevent the motor from burning out (col. 5, lines 51-53).
- Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention that one of the plurality of modes of Fukuhara and Gass et al would include an operation mode that compares a time interval between the rotation start signal and stop signal, and generates a completion signal representing the completion of the fastening operation, thereby providing the advantages of increasing rotational torque and preventing motor burnout, respectively, as taught by Thompson et al.

Art Unit: 2837

7. Claims 9, 10, 11, 12, 16, 17, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuhara (5,061,885).

- With respect to claims 9 and 16, Fukuhara discloses driver monitor for a screw driver system comprising: a driver having a first signal generating means for generating a rotation start signal to start a fastening operation, and second signal generating means for generating a rotational stop signal to stop a fastening operation (Fig. 1, #9 open is stop signal; closed is start signal; col. 3, lines 33-39); a power controller that supplies electric power to the driver in response to the start signal and stops electric power to the driver in response to the stop signal (Figs. 1 and 5, #4 supplies power to the motor based on the start/stop signal from #9); a driver monitoring means for monitoring the fastening operation of the driver based on predetermined fastening information, the start signal, and the stop signal, in order to determine whether fastening operation is correctly completed (Fig. 5, #4 monitors fastening operation based on #'s 1, 5, 2, and 6, which affect driver, #9 and these systems have predetermine information, such as time determinations for the counter, #21; Fig. 6, also determines when fastening operation is correctly completed, from time e to f.); generating an information signal based on a result of the monitoring (Fig. 1, NG generated and sent to #4), and a display unit that receives the information signal from the monitoring means and displays the information signal (col. 5, lines 33-37).
- With respect to claims 9, 10, and 16, Fukuhara discloses an operation processing unit (Fig. 1, #7) that outputs the result information signal to "other" equipment, including back to the power controller (Fig. 1, #4), which controls an electric motor screw driver

(col. 5, lines 34-35) and also discloses the power screwdriver used by “automatic machines like robots” (col. 1, lines 34-38). The Examiner takes Official Notice that the “other” equipment disclosed by Fukuhara would be an external peripheral apparatus. The motivation to send the information signal to external peripheral apparatuses is, for example, to send the “NG” signal directly to a conveyor belt to stop or slow the belt because the current screw is not adequately tightened or, the “NG” signal could be sent to an external computer that controls the entire process, including the electric screwdriver, the robot, and a conveyor belt, which provides the advantage of making the components operate together. Additionally, the operation processing unit could also send the “NG” signal to an external computer (personal computer) that is located remotely from the automatic machine system, thus providing the advantage of monitoring the overall system performance from a distance.

- Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention that the “other” equipment disclosed by Fukuhara would be an external peripheral device, such as a conveyor belt, computer, or remote control terminal, thereby providing the advantages of allowing the screw driver system and an external device operate together and monitoring the overall system performance from a distance.
- With respect to claims 11, 12, 17, and 18, Fukuhara discloses the driver monitoring means includes a determining means for determining one complete cycle of fastening operation based on a time interval between the rotation start signal and the rotation stop signal (Fig. 6); and the predetermined target time range and the determination means generates a completion signal representing the one complete cycle when the time interval

is in the predetermined target time range (Fig. 6, time intervals a-f are set based on the value in the counter, #21 of Fig. 1, and after .2 seconds, the cycle is complete; col. 4, lines 7-43).

8. Claims 14 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuhara (5,061,885) as applied to claims 9 and 16 above, and further in view of Gass et al (6,526,536).

- Fukuhara does not disclose the limitations of claims 14 and 20.
- Gass et al disclose an electric screwdriver system that has a storage means for storing information relating to a plurality of modes and fastening information (col. 15, lines 23-35); a user control panel for generating a selection signal to select one of the modes (col. 14, lines 13-21; col. 15, lines 10-22); and a computation means that uses the operation information for the selected mode (cols. 9/10, lines 46-67/1-24; Fig. 7, #26 operates in the input mode and computes values based on the selected mode and the feedback from the sensors, #42 and #125, and user input, #36). The motivation to uses a computation means that operates by a selected mode of operation stored in a storage means, and selected from a user control panel, is to provide the advantage of adding new functions or modes without replacement of the entire device (col. 10, lines 16-18).
- Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the screwdriver system of Fukuhara with a computation means that operates based on a selected mode of operation stored in a storage means, and selected from a user interface, thereby providing the advantage of allowing the user to

Art Unit: 2837

add new functions or modes without having to replace the entire device, as taught by Gass et al.

9. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuhara (5,061,885) as applied to claim 9 above, and further in view of Thompson et al (6,479,958).

- Fukuhara does not disclose the limitations of claim 15.
- Thompson et al disclose an electric screwdriver system (col. 1, lines 20-22) that has a plurality of modes, normal and pulsed (col. 3, lines 46-50). In this case, the Examiner has equated the pulsed mode to “an operation mode.” Thompson et al also disclose monitoring the fastening means by comparing a time interval between the rotation start signal and stop signal to generate a completion signal representing a completion of fastening operation (col. 5, lines 45-53; col. 6, lines 14-19; Fig. 6, comparing time interval from ‘C’ to ‘F’ is between the start signal, ‘A,’ and the stop signal (counter time-out), and the completion of fastening is shutting the motor off). The motivation to provide a plurality of modes and generating a completion signal is to increase the rotational torque (col. 1, lines 22-24) and prevent the motor from burning out (col. 5, lines 51-53).
- Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention that the system of Fukuhara would have a plurality of modes, including an operation mode that compares a time interval between the rotation start signal and stop signal, and generates a completion signal representing the completion of the fastening operation, thereby providing the advantages of increasing rotational torque and preventing motor burnout, respectively, as taught by Thompson et al.

Allowable Subject Matter

10. Claims 4, 7, 8, 13, and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

- With respect to claims 4, 13, and 19, the Prior Art does not disclose a test mode to determine the predetermined target time range for a complete cycle.
- With respect to claim 7, the Prior Art does not disclose counting, setting, and initial modes, respectively, each with the recited limitations.

Art Unit: 2837

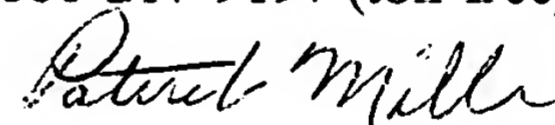
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick Miller whose telephone number is 571-272-2070. The examiner can normally be reached on M-F, 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin can be reached on 571-272-2800 ext 41. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9318.

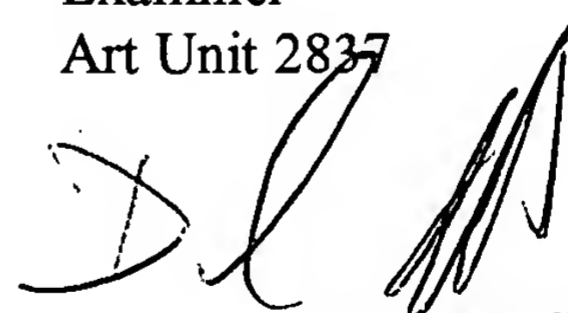
Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-3431.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Patrick Miller
Examiner
Art Unit 2837

pm
October 17, 2004



DAVID MARTIN
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